

Confirmation No. 4573

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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| Appellant: | BELLERS | Examiner: | Tran, T. |
| Serial No.: | 09/966,038 | Group Art Unit: | 2622 |
| Filed: | September 28, 2001 | Docket No.: | US010583US (NXPS.570PA) |
| Title: | DYNAMIC SAMPLING | | |

REPLY BRIEF

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Dear Sir:

This is a Reply Brief submitted pursuant to 37 C.F.R. § 41.41(a)(1) for the above-referenced patent application. This Reply Brief is submitted in response to the Examiner's Answer dated November 9, 2009.

Authorization is given to charge/credit **Deposit Account 50-4019** (US010583US) all required fees/overages to enter this paper.

I. Status of Claims

Claims 1-2, 4, 6-9, 11, 13-16, 18 and 20 stand rejected, and claims 3, 5, 10, 12, 17 and 19 stand objected to as being dependent upon a rejected base claim, but were indicated as containing allowable subject matter. Claims 1-20 are thus presented for appeal, with the understanding that claims 3, 5, 10, 12 and 17 include allowable subject matter (and are thus not discussed separately under the grounds of rejection).

II. Grounds of Rejection

The grounds of rejection to be reviewed on appeal are as follows:

- A. Claims 1-2, 4, 7-9, 11, 14-16, and 18 stand rejected under 35 U.S.C. § 102(b) over Page (U.S. Patent 4,755,795).
- B. Claims 6, 13 and 20 stand rejected under 35 U.S.C. § 103(a) over Page (U.S. Patent 4,755,795).

III. Appellant's Reply Argument

This Reply Brief is submitted in response to the second Examiner's Answer, noting that the previous Examiner's Answer was vacated in view of the Examiner's introduction of a new reference (the Kelly '008 reference). While no longer listed in the statement of rejection, the Examiner continues to rely upon the new '008 reference in the body of the rejection, contradicting the requirements of M.P.E.P. § 1207.03. This new '008 reference appears to have been submitted in an attempt to supplement the unsupported assertion of "Official Notice" as made in the Final Office Action, which was devoid of any supporting evidence or motivation for modifying the primary reference to include various circuitry/functionality as required in accordance with the proposed change. As with the improper assertion of "Official Notice," the Examiner's Answer also fails to provide any motivation for combining the '008 reference (or alleged "Official Notice") with the primary reference, and fails to provide any explanation as to how the primary reference would function as modified (*e.g.*, to include additional circuits/functions). The following discussion addresses this issue and others, as presented both as a response to specific arguments in the

Examiner's Answer and as further support for Appellant's positions stated in the underlying Appeal Briefs of record (which address issues raised in the Examiner's Answer).

In this Reply Brief, Appellant addresses four issues. The first issue relates to all rejections as relative to each of the Examiner's responses, and identifies the lack of correspondence between the cited power-based bandwidth determination and the claimed image-based spatial frequency determination (*e.g.*, the Examiner's erroneous attempt to equate a single frequency with a range of frequencies). The second issue relates to the Examiner's introduction of the new Kelly '008 reference after the filing of the Appeal Brief (as discussed above), as well as the corresponding failure to identify the new grounds of rejection, which render the § 103 rejections of claims 6, 13 and 20 improper on all grounds. The third issue rebuts specific mischaracterizations by the Examiner in the context of the § 103 rejections, which relate to the misinterpretation of various digital signal processing circuits in the primary reference and the impropriety of the Examiner's unsupported assertion of Official Notice and the lack of motivation/explanation as to the proposed modification to the primary reference. The fourth issue addresses aspects of the primary reference cited in the § 103 reference, where such aspects teach away from the claimed invention and the related modification of the primary reference that subverts the primary reference's purpose, and further address the Examiner's failure to address Appellant's arguments in the Examiner's Answer.

**A. The Rejection Of Claims 1-2, 4, 7-9, 11, 14-16, And 18
Under 35 U.S.C. § 102(b) Over Page (U.S. Patent 4,755,795)
Must Be Reversed Because The '795 Reference Does
Not Disclose Limitations As Asserted.**

The § 102(b) rejections fail because the '795 reference does not correspond and does not teach all claim limitations, including those directed to setting an analog sampling rate for a signal based upon a spatial frequency of an image in a signal (*e.g.*, using a highest (single) frequency to set the sampling rate). It appears that the rejections are based upon an erroneous equation of the term "frequency" with the term "bandwidth" and a related attempt to redefine Appellant's claim term "spatial frequency" as a range of frequencies over a bandwidth. The rejections confuse the term "spatial frequency" as claimed, which is used to

identify a frequency of an image in a signal (*e.g.*, where some images have a higher spatial frequency than others), with the term “bandwidth” in the cited references as applicable to a range of frequencies. The ‘795 reference processes digital signals at a digital sampling rate that is controlled based upon the power of the signal (*e.g.*, “by comparing the power of the entire input signal with the power of the input signal within a selected bandwidth”) as described in the Abstract and consistent with FIG. 1 (see A/D converter 13) and corresponding discussion at column 2:41-3:8. Referring to cited column 3:25-39, this comparison is used to increase the sampling rate for high-bandwidth (high-power) signals, and to reduce the sampling rate for low-bandwidth (low-power) samples. The Examiner’s interpretation is inconsistent with the general meaning and Appellant’s specification and, therefore, is improper under 37 C.F.R. § 1.75(d) and M.P.E.P. § 2111.

More specifically, this cited bandwidth-based digital sampling rate control is thus based upon a range of frequencies (bandwidth), and fails to disclose aspects of the claimed invention including those directed to sampling an analog signal utilizing a variable sampling rate that is set based upon the spatial frequency of an image in the analog signal. Referring to claim 1 by way of example, the sampling rate is set based upon a single frequency of an image in the signal (*e.g.*, the sampling rate is set based upon the image having the highest frequency among a plurality of images in the signal). The ‘795 reference is instead based upon a range of frequencies in the signal (not a single highest frequency in the signal), and does not appear to mention image or video anywhere. Furthermore, as consistent with the above, the ‘795 reference carries out all processing upon a digital signal that is neither susceptible to the issues as addressed in the claimed invention nor functions in accordance with the same.

The Examiner’s Answer fails to establish correspondence in view of the above, as the response to Appellant’s traversals is based upon a generally unrelated argument asserting that the claimed sampling mechanism “is not limited to a single circuit or a single element or a single device” and that the cited combination of an ADC 13, time delay 19 and resampler 17 “samples the analog signal at a variable sampling rate.” The Examiner’s Answer then relies upon an unsupported statement that attempts to define the term “spatial frequency” as “the frequency of change per unit distance across an image,” and goes on to assert that the ‘795

reference's analyzing of a "probability that the frequency components of the input signal are within the chosen bandwidth is high" now somehow discloses adjusting a variable sampling rate based upon the spatial frequency of an image.

In reply, Appellant submits that the record is devoid of any support for the Examiner's suggested redefinition of the term "spatial frequency" as equating the term with "bandwidth," as the spatial frequency of an image within a signal may be independent from an overall bandwidth of a signal. Moreover, the cited portions of the '795 reference involving a "probability that the frequency components of the input signal are within the chosen bandwidth" involve estimating whether the entire range of frequencies of a particular signal relates to an overall bandwidth range appropriate for a particular sampling range. This bandwidth estimation has no bearing upon any sample-rate determination that is based upon a (single, highest) spatial frequency of an image within a signal.

In addition, while the cited portions of the '795 reference involve receiving an analog signal, the processing therein is performed upon a digital signal and is based upon the power of the analog signal. The variable sampling rate as claimed is the rate at which an analog signal is sampled, which never happens in the '795 reference because the analog signal is converted at ADC 13. Relative to analog and digital signal processing, not only does the converter 13 fail to sample an analog signal at a variable sampling rate as suggested (the rate appears to be fixed), the cited sampling rate adjustment occurs *after* the converter 13 and is carried out upon a *digital* signal. For instance, the resampler 17 operates on a digital signal presented after the converter 13 to selectively compress digital data for storage (*see, e.g.*, FIG. 1 and column 2:61 – 3:2). As described at column 2:61-67 and column 3:9-24, this sampling and compression is carried out upon a digital signal, in connection with related digital processing such as the addition of bits. Clearly, the resampler 17 operates on a digital signal and the cited sampling rate adjustment is carried out upon this digital signal.

In view of the above, the '795 reference operates to control the sampling rate of a digital signal by determining an overall number of frequencies in a signal (the bandwidth). The '795 reference therefore fails to disclose or comprehend limitations directed to determining a highest-frequency image, adjusting a sampling rate based upon the highest-frequency, or doing so for an analog signal. Appellant therefore submits that the rejections

of claims 1-2, 4, 7-9, 11, 14-16, and 18 are wholly unsupported and requests that the rejections be reversed.

B. The Rejection Of Claims 6, 13 And 20 Under 35 U.S.C. § 103(a) Over Page (U.S. Patent 4,755,795) Must Be Reversed Because The Examiner's Answer Relies Upon A New Reference That Is Not Cited In The Statement Of Rejection.

The § 103(a) rejections fail because the Examiner's Answer, in attempting to address Appellant's traversals and arguments as presented in the Appeal Briefs of record, relies upon a new reference (the Kelly '008 reference) that is not cited in the statement of rejection or identified as a new grounds of rejection. It appears that the Examiner's citation to this new '008 reference is an attempt to rebut the Appellant's traversals regarding the Examiner's assertion of Official Notice in the Final Office Action, the impropriety of which is further addressed in Section C below. In short, the Final Office Action relied upon an unsupported assertion of Official Notice, which was improper on a multitude of fronts in failing to provide any evidence supporting the assertion, failing to explain how the '795 reference would be modified to include new circuits/components for operating as suggested, and further failing to provide any evidence of motivation for modifying the '795 reference.

Appellant identified and traversed this improper assertion of Official Notice in the record, as emphasized in the Appeal Brief filed on October 16, 2008. The Examiner's reliance upon a new reference in lieu of the previously asserted Official Notice, as introduced after the filing of Appellant's Appeal Brief, is contrary to M.P.E.P. § 1207.03 and unfairly deprived the Appellant of an opportunity to review the new reference and the related modifications to the primary reference prior to appeal, and to present a response thereto (*e.g.*, in the form of an Office Action Response). Appellant further notes that the Examiner's citation to the new '008 reference also appears to be a tacit acknowledgement that the primary '795 reference fails to disclose, teach or suggest all limitations as claimed, as further discussed in Section C below. Accordingly, Appellant submits that the § 103(a) rejection over the sole '795 reference is improper for asserting a new reference that is not part of the statement of rejection, and is thus further insufficient in failing to establish correspondence to the claimed invention. All § 103 rejections are thus improper and should be reversed.

C. The Rejection Of Claims 6, 13 And 20 Under 35 U.S.C. § 103(a) Over Page (U.S. Patent 4,755,795) Must Be Reversed Because The '795 Reference Does Not Disclose Limitations As Asserted.

As each of claims 6, 13 and 20 respectfully depend from independent claims 1, 8 and 15, the rejections of which must be reversed for reasons stated above, as the '795 reference fails to disclose limitations directed to controlling the sampling rate of an analog signal based upon the spatial frequency of an image (*e.g.*, a single spatial frequency).

Appellant further submits that the rejections of claims 6, 13 and 20 are improper because the Final Office Action has failed to cite teaching or suggestion of limitations indicated as not disclosed in the '795 reference, and because the Examiner's attempt to assert Official Notice is erroneous under the M.P.E.P. and relevant law. As indicated at page 6 in the Final Office Action, the '795 reference does not disclose "the claimed wherein the rate for each segment of the analog video signal sampling is at least twice a highest spatial frequency within content contained by the corresponding segment of the analog video signal." The Final Office Action goes on to assert that this capability "is old and well known in the art" without providing any citation or evidence whatsoever in support of this assertion. As consistent with the requirements of M.P.E.P. §2144.03(B), the Final Office Action's assertion of "Official Notice" regarding these limitations is clearly improper because it fails to provide any technical reasoning underlying such a decision, and further fails to establish that there is adequate evidence of motivation in the prior art for combining references as asserted, which is required when such a taking of Official Notice is unsupported by any evidence. The Examiner's Attempt to address these matters by citing to the new '008 reference in the Examiner's Answer fails as discussed above in Section A. Appellant thus submits that the § 103 rejections are unsupported and should be reversed.

D. The Rejection Of Claims 6, 13 And 20 Under 35 U.S.C. § 103(a) Over Page (U.S. Patent 4,755,795) Must Be Reversed Because There Is No Motivation To Modify The '795 Reference As Asserted.

The rejections of claims 6, 13 and 20 are improper because the Final Office Action failed to provide any evidence of motivation for modifying the '795 reference, or to discuss such a modification in any manner. As discussed above, the '795 reference does not disclose video signal processing. The rejected claims include limitations directed to content

contained by a segment of an analog video signal, and a sampling rate thereof being at least twice a highest spatial frequency of video content within a segment. These claim limitations are specifically directed to video processing, and approaches involving sampling based upon image content therein. The Final Office Action has provided no explanation as to how the '795 reference would be modified to operate to achieve its data storage (and compression) purposes, based upon the spatial frequency of video content.

The Final Office Action has further provided no explanation as to how the '795 reference would be modified to include new circuitry and other functionality in accordance with the proposed addition of teachings in the new '008 reference. For example, the '795 reference sets its sampling rate based upon the power of an incoming signal. The proposed modification would appear to require that the power-based sampling circuit in the '795 reference (*see, e.g.*, FIG. 1) be modified with additional circuitry that would permit the detection of a highest (single) spatial frequency of an image in an incoming signal (*e.g.*, prior to A/D converter 13). In contrast, the '795 reference appears capable of detecting a total power, as applicable to all frequencies in a bandwidth range, rather than a single (highest) frequency in that range (*e.g.*, where such a frequency may be one of many frequencies in the signal). The power-based sampling circuit in the '795 reference would further appear to require modification in order to control a variable sampling rate in response to the detected (highest) spatial frequency of an image in a signal, and to set the sampling rate at a frequency that is at least twice the highest spatial frequency. These modifications would be required in accordance with either the Final Office Action's attempt to assert Official Notice, or the Examiner's Answer's citation to the new '008 reference and its apparent combination with the primary '795 reference.

Appellant furthermore submits that one of skill in the art would not be motivated to modify the sampling rate of digital data for storage thereof using the spatial frequency of video content in an analog signal as suggested, and that such a modification would undermine the purpose of the '795 reference. As stated in the Abstract, discussion of objects at column 2:7-11 and replete throughout the '795 reference, the purpose of the '795 reference involves adjusting the digital sampling rate of a signal based upon the signal's bandwidth. Modifying the reference to sample an analog signal, rather than a digital signal, and to do so

based upon the spatial frequency of image data rather than the bandwidth thus completely undermines the purpose of the '795 reference. Moreover, the '795 reference's sampling of a digital signal based upon the bandwidth of the digital signal and corresponding Fourier transform (*see, e.g.*, column 3:66-4:5) teaches away from the proposed modification, because the modification would result in the sampling of an analog signal, rather than digital, upon which the indicated transform cannot operate.

The Examiner's Answer did not address the above issues. Applicant accordingly submits that the Office Action's failure to provide evidence or rationale for combining the cited references, and the resultant undermining of the purpose of the '795 reference, are improper and contrary to the M.P.E.P. and relevant law. See, for example, M.P.E.P. § 2143.01; *In re Gordon* 733 F.2d 900 (Fed. Cir. 1984); and *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (U.S. 2007). Appellant therefore submits that there is no motivation for combining references as asserted, and that the Section 103 rejections are improper and should be reversed.

IV. Conclusion

In view of the above, and the underlying Appeal Brief, Appellant submits that the rejections of claims 1-20 are improper and therefore requests reversal of the rejections as applied to the appealed claims and allowance of the entire application.

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